C7. CHAPTER 7

QUALITY SURVEILLANCE

C7.1. GENERAL. This chapter provides procedures for maintaining product quality of the U.S. Government-owned fuels, and procedures for activities accepting product from contract sources. It also addresses quality functions relative to bulk, into-plane, bunkers, and Posts, Camps and Stations (PC&S) programs, herein referred to as "quality surveillance." It identifies quality surveillance responsibilities, publications, sampling, testing, off-specification product, and the issuance of product meeting only intra-governmental receipt limits, stock rotation, and tank coating and cleaning criteria. The objective is to maintain fuel quality for the end user (aircraft, vessel, vehicle, etc.).

C7.2. QUALITY SURVEILLANCE RESPONSIBILITIES

C7.2.1. Joint Petroleum Office (JPO) shall:

C7.2.1.1. Maintain oversight of matters, records, and reports relevant to the quality of fuel.

C7.2.1.2. Require a theater petroleum laboratory correlation program. The JPO may subsequently designate either a Military Service or DESC to manage and coordinate the correlation program.

C7.2.2. Defense Energy Support Center (DESC) shall:

C7.2.2.1. Develop, design, maintain, and publish quality surveillance guidance establishing minimum policies, programs, and procedures for overall DoD use.

C7.2.2.2. Receive, control, and investigate customer depot complaints and product quality reports in accordance with DLAD/DLAI 4155.24 and MIL-STD-3004.

C7.2.2.3. Provide disposition instructions for off-specification fuels. Prior to issuing off-specification instructions to an activity, coordinate instructions with the appropriate Military Service's technical office.

C7.2.2.4. Contract for commercial laboratory services, funding such services for DESC-controlled terminals. Military laboratories will be used where practical.

C7.2.2.5. Establish and maintain a quality surveillance program for DLA-owned product in its custody as follows:

C7.2.2.5.1. For GOCO, COCO, and NATO-operated storage facilities, and where quality surveillance has been accepted through a Memorandum of Understanding (MOU) or Agreement (MOA) with a foreign government. When quality surveillance and property administration responsibility are delegated to another agency or military unit, DESC contracts shall indicate such organization.

C7.2.2.5.2. Loading and discharging of MSC-controlled tankers at foreign government-operated storage facilities.

C7.2.2.5.3. When quality surveillance has been accepted by DESC through an Interservice Agreement (ISA) with the Military Services or through a MOU between the Military Services and a foreign government, DESC shall provide qualitative and quantitative data in response to the needs of the JPOs and Military Services, as appropriate, in fulfilling their respective area management responsibilities (e.g., slating, product rotation, inventory reporting, etc.).

C7.2.2.5.4. Assess procedures used to receive and maintain the quality of DLA-owned product stored at military facilities, after prior notification to the military activity.

C7.2.2.6. Fund DESC requested samples sent to a Military Service-operated laboratory where said laboratory is on a fee-for-service basis approved by both DESC and a Military Service's comptroller organization.

C7.2.2.7. When assigned, manage, and coordinate the theater petroleum laboratory correlation program.

C7.2.3. The Military Services shall establish and maintain a quality surveillance program for DLA-owned product in their custody, to include acceptance of product from U. S. Government components, contractor sources, and foreign governments (e.g., PC&S and FOB destination deliveries) as follows:

C7.2.3.1. At Government-owned and operated fuel facilities.

C7.2.3.2. At Contractor-operated fuel facilities under U.S. military contracts.

C7.2.3.3. At foreign governments fuel facilities (excluding discharging and loading covered by DLA, as stated in subparagraph C7.2.2.5.2., above) under the U.S. Military Services/Government MOUs or international agreements. See chapter 18 of this volume.

C7.2.3.4. Loading and discharging of MSC-controlled tankers at U.S. Government terminals operated by a foreign government under bilateral agreements or NATO terminal operated by U. S. military personnel.

C7.2.3.5. At commercial and U. S. Government fuel facilities operated under DESC contracts where the petroleum quality surveillance function is delegated to a military unit by DESC (consistent with ISA guidance specified in section C7.3., below). Upon request, military units shall provide DESC-BQ with quality data to determine product suitability in meeting special requirements. Dormant tanks will be managed and reported in accordance with guidance provided in section C7.5., below.

C7.2.3.6. The Military Services shall provide an approved laboratory fee schedule to DESC-BQ by July 1 of the year preceding the fiscal year in which the fee schedule will cover.

C7.2.3.7. When assigned, manage, and coordinate the theater petroleum laboratory correlation program.

C7.3. QUALITY SURVEILLANCE SUPPORT VIA INTERSERVICE SUPPORT AGREEMENT (ISA). In the interest of protecting U. S. Government-owned product at minimum cost, ISAs will be used to obtain quality surveillance support. Such agreements shall be secured whenever it is determined to be the most practical and efficient way of providing quality surveillance of DLA-owned product by a contractor, foreign government, or NATO DFSPs. ISAs for quality surveillance functions shall be initiated and executed at the lowest practicable command level. DoDI 4000.19 (see reference index) provides formal guidance and detailed instructions.

C7.4. QUALITY SURVEILLANCE PROGRAM

C7.4.1. Publications. MIL-STD-3004 (see reference index, volume I of this manual) and Military Services' technical manuals provide guidance on quality surveillance functions relevant to petroleum products and services. MIL-STD-3004 shall be developed by DESC-BQ in coordination with the Military Services. DESC-BQ shall be the central source for quality surveillance guidance within the Department of Defense.

C7.4.2. Quality Representative (QRs)

C7.4.2.1. Designation of QRs. A QR shall be designated for each terminal (terminal and pipeline-depot operations), storing and handling U. S. Government-owned petroleum product, to administer the petroleum quality surveillance program and its functions. At contractor-operated DFSPs, the QR may be a resident or itinerant. At Government-operated terminals (GOGOs), management may designate appropriate personnel to manage the quality surveillance program at a depot.

C7.4.2.2. Property Administration. To avoid duplicate effort, QRs shall perform property administration functions in conjunction with quality surveillance functions, unless it can be demonstrated economically disadvantageous or administratively impractical.

C7.4.2.3. Contractor-operated DFSPs. QRs shall ensure contractors comply with contractual requirements in storing, handling, and issuing U. S. Government-owned petroleum products and related services. QRs shall not enter into informal agreements with the contractor that may compromise the contract or operating agreement, nor accept voluntary services for the U. S. Government without approval of the contracting officer.

C7.4.3. Buying Programs. DESC shall contract and arrange transportation for required petroleum products procured under the following programs: bulk, into-plane, bunkers, and PC&S. Natural gas and coal guidance is prescribed in volume III of this manual.

C7.4.3.1. Bulk Program. Products purchased under this program are normally jet fuels (JP-5, JP-8, and Jet A-1), Naval Distillate Fuel (F-76), bulk lube oils, and bulk FSII. Quality shall be addressed under the contract and shall be monitored by a DCMA QR at the contractor's facility. The QRs shall monitor product movement, storage, and issues. Monitoring shall be continued by the respective Military Service during and after receipt of product, as prescribed in subsection C7.2.3., above.

C7.4.3.2. Into-Plane Program. Jet fuel is procured under the Into-Plane Program with quality addressed in the supply contract. Into-Plane solicitations are prioritized and issued with the JP8 as the preferred product. Performance requirements are described in MIL-STD-1548, Into-Plane Servicing of Fuels at Commercial Airports. DCMA's QRs shall monitor into-plane quality, validating the contractor's ability to perform services when an authorized aircraft requires services. The Military representative operating the aircraft shall perform final inspection and acceptance of into-plane fuel and services. In addition, product quality at into-plane facilities shall be monitored by the contractor via sampling. Submission of such samples for testing will be in accordance with MIL-STD-1548 or contract requirements.

C7.4.3.3. Bunker Program. The Bunker Program is designed to provide commercial bunker fuel and services in areas where Government-owned bulk stocks are not economically feasible. Products required under this program are commercially available products (e.g., MGO, RMB-10/IFO 60, RME 25/IFO 180, RMG-35/IFO 380, fuel oils #4, #5, and #6). Vessel surveillance procedures shall be in accordance with applicable Military Services' guidance.

C7.4.3.4. PC&S Program. This program provides for the procurement of commercially available gasoline, fuel oils, and diesel fuel requiring direct delivery to customers. Contractors shall establish a quality control program without Government oversight. Receiving activities may institute and maintain a quality program for inspecting and accepting PC&S fuel deliveries based upon guidance developed by their respective Military Service Control Point. As part of the quality program, receiving activities shall submit samples for B1 testing at scheduled intervals to the appropriate Military Service area laboratory.

C7.4.3.5. Missile Fuels Program. This program supports the nation's space and defense programs, providing missile fuels, chemicals and gases in support of satellites, launch vehicles, and DoD's mission critical weapons programs. Customers include, DoD, NASA, DoE, commercial entities, and academic research institutions. Chapter 3 identifies the specific missile fuel, chemical, and gas products managed. Transportation, storage, and related services are procured in support of these products, most of which are hazardous in nature, and require special handling and safeguarding. Quality Assurance is incorporated within the procurement contracts, with DCMA QARs providing onsite support at the contractors' facilities as specified in the contract. QRs shall monitor product movement, storage, and issues within DESC's wholesale system. Monitoring shall be continued by the respective Military Service during and after receipt of product, as prescribed in subsection C7.2.3., above."

C7.4.4. Product Sampling and Testing

C7.4.4.1. Quality surveillance requirements for products are prescribed in MIL-STD-3004. It identifies sampling frequency, sampling locations, and various types of tests to be performed. Usually,

testing is performed at refinery laboratories, commercially-contracted laboratories, and the Military Services' laboratories. Contracts relating to receipt and storage of products procured for the U. S. Government's use may require the contractor to provide laboratory and testing services of commercial laboratory services. If the contractor provides the laboratory, but is not required to perform testing services, QRs may perform the tests needed to ensure the quality of the Government's products at that location. Dormant stocks shall be sampled in accordance with the frequency specified in MIL-STD-3004; see definition of dormant stocks in subsection C7.5.2., below.

C7.4.4.2. Into-Plane Program. Sampling and testing requirements are prescribed in MIL-STD-1548 or the contract.

C7.4.4.3. Bunker Program. DESC shall contract for testing requirements. Vessels shall request participation in DESC 's Bunker Test Program. All vessels participating in the testing program shall be provided sampling kits by DESC designated testing contractor. A continuous drip sample shall be taken from the bunker manifold drip-sampler on bunker program receipts. (This program is not to be used for deliveries of bunkers from DESC-owned stocks of F-76 and IFO 180/380 that have been received and tested within the U. S. Government's logistics system.)

C7.4.4.4. PC&S. Product sampling and testing will be in accordance with the Military Services' testing requirements prescribed in subsections C7.2.3. and C7.4.3.4., above.

C7.4.5. Fuel Laboratory Support

C7.4.5.1. The Military Services shall:

C7.4.5.1.1. Maintain military fuel-area laboratories and provide associated services where practical and cost effective.

C7.4.5.1.2. Maintain and perform base-level quality surveillance (consisting as a minimum of required base-level testing to evaluate product identification, and cleanliness of the fuel and fuel-handling systems); such efforts are not a substitute for area fuel laboratory requirements.

C7.4.5.1.3. Fund the costs of base-level quality surveillance program.

C7.4.5.2. DESC shall:

C7.4.5.2.1. Maintain DESC fuel laboratories and provide associated services where practical and cost effective.

C7.4.5.2.2. Fund the costs of DLA-owned product testing at Defense-wide Working Capital Funded Military Services' laboratories deemed in the Government's best interest for testing to continue at those laboratories. Funding shall begin two years after DESC is advised of the requirement or sooner if a budget-based transfer is made by a Military Service's laboratory to DESC.

C7.4.5.2.3. Fund the costs of commercial laboratory testing of DLA-owned product at DESC-controlled terminals.

C7.4.5.2.4. Designate laboratories for testing DLA-owned product at Military Service, DESC, or commercial locations. Selection will be based on whether the location is the most practical and cost efficient for DoD.

C7.4.6. Off-Specification Product

C7.4.6.1. Bulk Program

C7.4.6.1.1. Reporting Responsibility and Format. The Military Services and DESC components having QS responsibility for DLA-owned product as defined above, shall report all instances of off-specification product, malfunctioning equipment, and operating deficiencies attributed to fuel quality to DESC-BQ via appropriate channels. The Military Service component, when making its report shall info the cognizant DESC field activity (DESC region/field office) and the appropriate JPO. Notification shall be made in accordance with instructions provided in MIL-STD-3004. Product meeting intra-governmental receipt limits does not comply with specification requirements and is deemed off-specification for reporting purposes.

C7.4.6.1.2. Suspending Issues. Off-specification product will be withheld from issue pending receipt of specific disposition instructions from DESC-BQ.

C7.4.6.1.3. Investigation of Off-Specification Product. The Military Services and DLA components having quality surveillance responsibility shall investigate the cause of the off-specification product. The following information, if available at the time of the disposition request, will be supplied to DESC-BQ: suspected cause of the problem; efforts to effect correction; the estimated time required to correct the problem. The cost of obtaining fuel from alternate sources and corrective action (e.g., testing, equipment, and labor) shall be documented, validated, and reported to DESC-BQ and the cognizant DESC field activity through the appropriate Military Service's screening points. DESC-BQ shall request investigation by the origin QR or others as required in order to resolve a complaint.

C7.4.6.1.4. Disposition of Off-Specification Product. DESC-BQ shall perform quality evaluation of off-specification product and provide disposition instructions to the managing DESC field activity and advise DESC-F/B/R, MSC, and MTMC, as appropriate, of action taken. Coordination with the Military Services' technical offices will be made by DESC-BQ for product deliveries that do not meet intra-governmental receipt limits. If the product is to be shipped to a military consignee, the shipper shall advise the consignee of the full quality and, where applicable, the intra-governmental receipt limit details. Alternatives available to restore off-specification product to specification or acceptable intra-governmental receipt limits (cost will include the manpower expended by the Military Services to clean up the fuel) shall be reviewed prior to disposal. Inventory management action shall be initiated by DESC-F, as required. Disposal action will be accomplished after all other alternatives have been exhausted. (See DoD 4160.21-M)

C7.4.6.1.5. Management of Customer/Depot Complaint Program. DESC-BQ is the DESC focal point for all reported customer/depot complaints. Fuel quality deficiencies and associated problems shall be documented and reported to DESC-BQ for trend analysis and identification/corrective action of systemic problems. Mission capability and readiness shall be considered when implementing corrective actions.

C7.4.6.2. Into-Plane, Bunker, and PC&S Programs

C7.4.6.2.1. Reporting Problems. The Military Services' customers shall promptly notify DESC-BQ, via telephone, through their respective Military Service's technical office, of fuel quality problems or equipment and operating deficiencies attributed to fuel quality. Informational correspondence will be provided to the managing DESC field activity regarding the problem. The Military Services' technical offices shall promptly report such problems to DESC-BQ by telephone and in writing; coordinating corrective action with base-level DFSPs and DESC-BQ.

C7.4.6.2.2. Investigation of Off-Specification Product. The Military Services shall initiate investigative action and formally report suspected and founded quality problems in accordance with the guidance prescribed under the Joint Product Quality Deficient Report Program – DLAD/DLAI 4155.24/AR 702-7/SECNAVINST 4855.5b/AFI 21-115/MCO 4855.5F, and MIL-STD-3004.

C7.4.6.2.3. Military Services' Technical Offices. The Military Services' technical offices shall serve as the central point for documentation of all quality problems to ensure corrective action and preclude recurrence at the least cost to the Government. Fuel quality deficiencies and associated problems shall be documented and reported to DESC-BQ for trend analysis to preclude recurrence and correct systemic problems. Corrective actions ensure mission capability and readiness. See chapter 3 of this volume for a listing of the Military Services' technical offices.

C7.4.7. Contaminated Tanker Cargoes (Off-Specification Product)

C7.4.7.1. This section discusses "off-specification" cargoes that may require tanker diversion or reprocessing of product by industry. Due to the relatively high cost of tanker time and the time required to negotiate contracts for preprocessing, when required, it is necessary to expedite disposition instructions for contaminated cargoes aboard tankers.

C7.4.7.2. In the event the cargo is contaminated as to possibly cause the tanker to be diverted to another destination or require reprocessing by industry, the unit discovering such condition shall promptly notify DESC-BQ, JPO, SAPO, and the managing DESC field activity, as appropriate, by telephone or immediate message (if by message, DESC-BQ shall be listed as an "TO" addressee). Upon notification, DESC-BQ shall coordinate as necessary with DESC-BIT and MSC. The following information shall be provided:

C7.4.7.2.1. Grade (product code: F-76, JP-8, etc.).

C7.4.7.2.2. Quantity of contaminated product.

C7.4.7.2.3. Cargo number and barge or ocean tanker name.

C7.4.7.2.4. Elements not within specification limits on a procurement cargo or intra-governmental receipt limits when from Government-owned stocks, degree of contamination, and contaminating materials if known.

C7.4.7.2.5. Recommended alternate use, proposed recovery measures, or disposal, etc.

C7.4.7.3. DESC-BQ shall provide disposition instructions to the reporting unit. After coordination, MSC, the managing DESC field activity, the JPO, and the applicable Military Service's technical office shall be furnished copies of all correspondence documenting communication between DESC, its managing field activity, MSC, and the applicable Military Service's technical office, and the reporting unit.

C7.4.8. Intra-Governmental Receipt Limits

C7.4.8.1. Delivery Policy. Every effort will be made to deliver product, meeting procurement specification requirements, to Military activities. Delivery of off-specification product meeting intra-governmental receipt limits will be governed by the procedures outlined in MIL-STD-3004. Issuance of fuel meeting only intra-governmental receipt limits will be used as a "safety net" to continue issuing product to customers when a problem has been identified, and corrective action is being taken to prevent recurrence.

C7.4.8.2. End Use Policy. Only product meeting established use criteria identified in the Military Services' technical documents shall be issued to end users (aircraft, vessel, vehicle, generator, etc.)

C7.4.8.3. Defuels/Returns for Credit. See chapter 10, section C10.9., of this volume.

C7.5. STOCK ROTATION PROGRAM

C7.5.1. General. Bulk petroleum stock must be rotated on a first-in first-out basis. Quality, however, must be the overriding concern. Stocks showing signs of aging or deterioration must be rotated first, regardless of time in storage.

C7.5.2. Dormant Stock Policy. Rotation of DLA-owned dormant stocks (due to insufficient consumption throughput or infrequent receipts at DFSPs) is governed by the following:

C7.5.2.1. Dormant stocks are defined as storage tanks that have not received fuel from an outside source for the past 6 months.

C7.5.2.2. The foremost principle of the "dormant stock policy" is the decision to rotate should be based on quality data. Instructions for frequency of testing and reporting of quality data are prescribed in

MIL-STD-3004 (see reference index). In addition, dormant stock rotation may be due to facility concerns (e.g., tank cleaning, maintenance, or closure).

C7.5.2.3. A rotation timetable will be used for budgetary and planning purposes in forming rotation plans. The timetable provides probable shelf lives of major fuel categories and sets the maximum outyears in which dormant fuel should be scheduled for rotation:

C7.5.2.3.1. Fuel oils #1 and #2 - every 2 years.

C7.5.2.3.2. Diesel fuel and gasoline - every 3 years.

C7.5.2.3.3. Jet fuel and residuals - every 5 years.

C7.5.2.4. Stock rotation plans will be submitted annually by DESC Americas to DESC-BQ; data will be reported on DD Form 2512, Bulk Fuel Stock Rotation Plan, RCS: DLA(A)2505(DFSC). Quality and facility data shall determine which outyear stocks are to be scheduled for rotation. Rotation plans will include the following: location of the DFSP; dormant tank number; date the tank is scheduled to be cleaned; product in the tank; volume of product; suggested FY for rotation; degrading characteristics supporting the rotation, all quality test reports for the product since receipt; facility rationale for rotation; suggested alternatives for rotation destinations; mode of transportation; any other data considered useful for the coordination and approval process.

C7.5.2.5. Approved rotation plans will state the executing agency. Projected movements in the coordinated and approved rotation plan will provide the basis for the near term budget and procurement planning. However, as the projected movements become imminent, the final decision to rotate the stocks will be based on quality, facility and funding parameters at that time. Thus, the stock rotation plan and its initial administrative approval do not constitute final authority to rotate fuel. Routine fund authorizations for transportation in theaters are not to be utilized for stock rotation movements. Special and separate fund authorizations will be issued when stock rotation plans have been budgeted and approved. Because fuel degradation is not entirely predictable, projected movements may be accelerated or rescheduled from one year to another.

C7.5.2.6. DESC Regions shall annually update and submit rotation plans to DESC-BQ. To the greatest extent possible, the review and coordination between DESC and its field activities will be conducted by correspondence or telephone in lieu of annual meetings. The annual coordination process includes a budget review that may require direct input of the planner to aid in defending budget requirements.

C7.5.2.7. Stock rotation is an integral part of quality surveillance. DoD Components who have quality surveillance responsibility at DFSPs shall assume stock rotation functions and initiate stock rotation action for dormant stocks (see subsection C7.5.3., below).

C7.5.3. Reporting Responsibility for Dormant Stock

C7.5.3.1. DLA. DLA shall establish and maintain a stock rotation program for DLA-owned product. DESC shall coordinate proposed stock rotation plans submitted annually by DESC Regions. The most economical or expedient rotational solution will be selected after considering relevant operational, technical, procurement, and budgetary factors. DESC, in coordination with its managing field activities and the JPOs, shall designate the organization responsible for executing movements.

C7.5.3.2. DESC Americas. DESC Regions shall propose an annual stock rotation plan to DESC-BQ in accordance with the provisions of subsection C7.5.2., above. Additionally, DESC Americas shall consolidate its input with the Military Services' input prior to submission of the annual proposal.

C7.5.3.3. Military Services. Operators at military DFSPs shall report dormant tank data in accordance with subsection C7.5.2., above, to DESC Americas through the assigned DESC field office (if within DESC Americas' area of responsibility) and JPOs overseas.

C7.5.3.4. Reporting Date. Area stock rotation plans are due at DESC-BQ on the "RQMTS Due" (for DESC-B) date identified in DESCI 4220.1, enclosure 1 for Bulk Petroleum Products. For example, purchase program 1.1.a, WESTPAC requirements submission date is April 15, the stock rotation plan for all product tankage within WESTPAC (whether the product is purchased under this program or not) are due to DESC-BQ annually on April 15.

C7.6. TANK COATING AND CLEANING CRITERIA

C7.6.1. All newly constructed tanks at intermediate and base-level DFSPs shall be internally coated in entirety using an approved coating system. Existing fuel storage tanks (aviation, marine, ground, and heating fuels) should have the internal bottom, vertical surfaces up to one meter above the bottom, and the internal roof surface coated with an approved coating system. Existing fuel tanks that are not entirely coated may be proposed for complete internal coating on a case-by-case basis, where economies can be demonstrated to accrue, or if there is a continuing quality problem documented. For storage tanks in support of aircraft operations (aviation fuel - JP-5, JP-8), piping and appurtenances (excluding aluminum and stainless piping) may be coated as determined to be necessary or when a continuing problem exist.

C7.6.2. Tanks owned or controlled by DESC or DESC contractors will be cleaned as indicated in the table provided below. They may be cleaned more frequently if sample data indicates the quality has changed significantly and to the point that product received into the tank will no longer meet specification requirements. Military Service-owned tanks holding DLA-owned product shall be tested and cleaned in accordance with Military Service specific guidance (e.g., AFM-85-16 or NAVFAC MO-230 for Military Service tanks).

TANK CLEANING REQUIREMENTS				
Tank Type	Tank Interior Uncoated		Tank Interior Coated	
	Without Inlet	With Inlet	Without Inlet	With Inlet

	Filter Separator	Filter Separator	Filter Separator	Filter Separator
Operating Tanks (i.e., tanks which directly serve refueling vehicles or hydrant systems)	3 years	5 years	5 years	8 years* or 5 years**
Bulk Storage	4 years	6 years*	6 years	8 years*
Buffer Tanks		5 years**	5 years**	5 years**
Bulk Storage (Barge Delivery)	3 years	5 years**	5 years**	8 years*
Bulk Storage (Tanker Delivery)	3 years	5 years**	5 years**	5 years**

*If a filter separator or micronic filter is installed in the receipt system.

**Tanks should be inspected every 5 years to check the mechanical integrity of the interior and components, although the cleanliness requirement for inspections would have a longer extended time period (as indicated above)